

WHAT IS CLAIMED IS:

1. A manufacturing method of a semiconductor integrated circuit device, comprising the steps of:

(a) depositing a first silicon nitride film over a main surface of a semiconductor substrate in a single-wafer CVD reactor by thermal CVD using a first source gas containing a silane-based gas and an ammonia gas;

(b) forming, over the main surface of said semiconductor substrate, a plurality of first patterns having a low pattern density region and a high pattern density region; and

(c) depositing a second silicon nitride film over the main surface of said semiconductor substrate, which has said plurality of first patterns formed thereover, in a single-wafer CVD reactor by thermal CVD using a second source gas containing a silane-based gas and an ammonia gas;

wherein said first source gas and said second source gas are different from each other in a flow rate ratio of said ammonia gas to said silane-based gas.